

REMARKS

Appropriate subject headings have been added to the specification. Also a claim to foreign priority has been added after the title on page 1. Additionally, the reference to Claim 1, on page 3 in the last full paragraph has been rewritten to include the entire text of amended Claim 1.

In paragraph 2 of the Office Action, the Examiner rejected Claims 2-7 under 35 U.S.C. §112, second paragraph.

Reconsideration is requested.

Specifically the Examiner rejected the above claims for use of the term XENOY®, which is a trademark.

Claim 2 has been amended to delete the reference to XENOY®. The specification as filed pointed out that XENOY® was a polycarbonate based component, and thus discloses support for use of the term "comprises a polycarbonate resin" (see specification page 5, line 24 to page 6, line 1). It is therefore requested that the 35 U.S.C. §112, second paragraph rejection be withdrawn.

In paragraph 4 of the Office Action, the Examiner rejected Claims 1-8 under 35 U.S.C. §103 as being unpatentable over Groupy et al., U.S. Pat. No. 4,029,350 (hereinafter "Groupy et al.") in view of Carroll, III et al, U.S. Pat. No. 6,247,745 (hereinafter "Carroll, III et al").

Reconsideration is requested.

Claim 1 has been amended to further define the containment element (15) as "designed to withstand stress of an impact and resulting lateral thrust (16) generated by said impact" (antecedent basis can be found in the specification page 7, lines 9-14).

Groupy et al. discloses an energy absorbing device having at least two absorbing members (2), each one having a honeycomb structure. A U-shaped transverse beam (1) is supported by said at least two absorbing members and said beam (1) is inserted into a shield (3) (see figures 1 and 2; and col. 1, lines 53-55). Moreover, said absorbing elements are composed of plastic materials and elastomers. The chosen materials have a slight variation of the traction elasticity modulus with respect to the temperature thereby obtaining an absorbing element having a correspondingly slight variation of apparent compression modulus (see col. 3, lines 10-20).

In contrast, the present invention teaches an improved absorption device comprising a honeycomb structure that has a further containment element (15) on top of said honeycomb structure (20), which is preferably made of a high resistance material, such as steel (see specification page 7, lines 2-6, and lines 23-24). These containment elements must be sized in order to withstand the considerable stress due both to the impact and consequent lateral thrust of the injection-molded honeycombs (see specification page 7, lines 9-14). The effect of these elements on the overall weight of the device is modest as their volume is well below the overall volume. Said elements are disposed on top of the honeycomb structure and may be affixed (e.g., glued or welded) on top of said honeycomb structure (see figure 4, and specification page 7, lines 2-6).

In the Groupy et al. patent the choice of the material for the honeycomb structure is made on the basis of the variation of the traction elasticity modulus with respect to the temperature to obtain an absorbing structure having a

correspondingly slight variation of the apparent compression modulus (see col. 3, lines 10-20).

The present invention teaches a material characterized by a high elongation at break value. Said characteristic permits production of injection-molded honeycombs that work more efficiently than the known injection-molded honeycombs. In fact, during the impact, the internal walls of the honeycombs molded with a polycarbonate resin do not collapse, and therefore perform very efficiently in absorbing the impact energy. Wherein said impact energy is then transformed into deformation energy (see specification page 6, lines 10-17). Additionally, the polycarbonate material is not cited in the Groupy et al. patent (see col. 3, lines 10-20).

Furthermore, neither Groupy et al. nor Carol III, et al does not disclose outlets terminating in holes (13) (see specification page 5, lines 17-20). Based on the lack of a disclosure in the cited prior art (as well as the accompanying Figures to the prior art) there is no disclosure or suggestion of honeycomb like sections ending in holes.

Additionally, the Examiner, in the Response to Arguments, stated that element (4) in Groupy et al. was equivalent to the containment element (15) of the present invention. Applicant believes that the Examiner must have meant element (1), the U-shaped beam or (3) the shield because element (4) is a peak on the graph of Fig. 6. Applicant respectfully disagrees. Neither element as described in the Groupy et al. patent is a containment element designed to withstand the stress of an impact and the resulting lateral thrust that is generated by the honeycomb structures when they are impacted by a force (see

specification page 7, lines 9-14, and amended claim 1).

While a U-shaped beam and/or a shield is compatible with the present invention, neither one is a replacement for the containment element as defined in the present invention.

Furthermore, Carroll III, et al. does not disclose or suggest the containment element (15) or holes (13) as defined in the present application and amended claim 1.

It is therefore requested that the §103 rejection be withdrawn.

Based upon the above amendments and remarks, applicant respectfully submits that all of Claims 1-8 are now allowable over the prior art and that the present application is in proper form for allowance.

An early and favorable action is earnestly solicited.

Respectfully submitted,



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